

## What is claimed is:

1. An isolated polynucleotide comprising a polynucleotide having at least a 70% identity to a polynucleotide encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:2.
2. An isolated polynucleotide comprising a polynucleotide having at least a 70% identity to a polynucleotide encoding the same mature polypeptide expressed by the FabD gene contained in the *Streptococcus pneumoniae* of the deposited strain.
3. An isolated polynucleotide comprising a polynucleotide encoding a polypeptide comprising an amino acid sequence which is at least 70% identical to the amino acid sequence of SEQ ID NO:2.
4. An isolated polynucleotide that is complementary to the polynucleotide of claim 1.
5. The polynucleotide of Claim 1 wherein the polynucleotide is DNA or RNA.
6. The polynucleotide of Claim 1 comprising the nucleic acid sequence set forth in SEQ ID NO:1.
7. The polynucleotide of Claim 1 comprising nucleotide 1 to the stop codon set forth in SEQ ID NO:1.
8. The polynucleotide of Claim 1 which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2.
9. A vector comprising the polynucleotide of Claim 1.
10. A host cell comprising the vector of Claim 9.
11. A process for producing a polypeptide comprising: expressing from the host cell of Claim 10 a polypeptide encoded by said DNA.
12. A process for producing a FabD polypeptide or fragment comprising culturing a host of claim 10 under conditions sufficient for the production of said polypeptide or fragment.
13. A polypeptide comprising an amino acid sequence which is at least 70% identical to the amino acid sequence of SEQ ID NO:2.
14. A polypeptide comprising an amino acid sequence as set forth in SEQ ID NO:2.
15. An antibody against the polypeptide of claim 14.
16. An antagonist which inhibits the activity or expression of the polypeptide of claim 14.

17. A method for the treatment of an individual in need of FabD polypeptide comprising: administering to the individual a therapeutically effective amount of the polypeptide of claim 14.

5 18. A method for the treatment of an individual having need to inhibit FabD polypeptide comprising: administering to the individual a therapeutically effective amount of the antagonist of Claim 14.

19. A process for diagnosing a disease related to expression or activity of the polypeptide of claim 14 in an individual comprising:

- 10 (a) determining a nucleic acid sequence encoding said polypeptide, and/or  
(b) analyzing for the presence or amount of said polypeptide in a sample derived from the individual.

20. A method for identifying compounds which interact with and inhibit or activate an activity of the polypeptide of claim 14 comprising:

15 contacting a composition comprising the polypeptide with the compound to be screened under conditions to permit interaction between the compound and the polypeptide to assess the interaction of a compound, such interaction being associated with a second component capable of providing a detectable signal in response to the interaction of the polypeptide with the compound;

20 and determining whether the compound interacts with and activates or inhibits an activity of the polypeptide by detecting the presence or absence of a signal generated from the interaction of the compound with the polypeptide.

25 21. A method for inducing an immunological response in a mammal which comprises inoculating the mammal with FabD polypeptide of claim 14, or a fragment or variant thereof, adequate to produce antibody and/or T cell immune response to protect said animal from disease.

30 22. A method of inducing immunological response in a mammal which comprises delivering a nucleic acid vector to direct expression of FabD polypeptide of claim 14, or fragment or a variant thereof, for expressing said FabD polypeptide, or a fragment or a variant thereof *in vivo* in order to induce an immunological response to produce antibody and/ or T cell immune response to protect said animal from disease.

23. An isolated polynucleotide comprising a polynucleotide having at least a 70% identity to a polynucleotide encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:4.

(24) An isolated polynucleotide comprising a polynucleotide having at least a 70% identity to the polynucleotide sequence of SEQ ID NO:3.

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